

## SEQUENCE LISTING

<110> Axiogenesis AG  
Ehlich, Andreas  
Bohlen, Heribert  
Schwengberg, Silke

<120> Secreted Proteins As Markers For Cell Differentiation

<130> 2590.0050002/EJH/UWJ

<140> US 10/594,177

<141> 2004-07-08

<150> PCT/EP04/07529

<151> 2004-07-08

<150> US 60/485,462

<151> 2003-07-08

<150> EP 03015400.9

<151> 2003-07-08

<160> 4

<170> PatentIn version 3.1

<210> 1

<211> 5443

<212> DNA

<213> Mus musculus

<220>

<221> promoter

<222> (1)..(5443)

<223> alpha myosin heavy chain gene, promoter region

<220>

<221> promoter

<222> (2)..(5442)

<223> promoter region contained in SEQ ID NO 3

<220>

<221> 5'UTR

<222> (4369)..(4389)

<223> exon1

<220>

<221> 5'UTR

<222> (5071)..(5139)

<223> exon 2

<220>

<221> 5'UTR

<222> (5431)..(5443)

<223> exon 3

<400> 1	
ggatcctgca aggtcacaca aggggtctcca cccaccaggt gccctagtct caatttcagt	60
ttccatgcct tgttctcaca atgctggcct cccagagct aatttggaact ttgtttttat	120
ttcaaaaggg cctgaatgag gagtagatct tgtgctaccc agctctaagg gtgcccgtga	180
agccctcaga cctggagcct ttgcaacagc cctttagggtg gaagcagaat aaagcaattt	240
tccttaaagc caaaatcctg cctctagact cttcttctct gacctcggtc cctgggctct	300
aggggtgggga ggtggggcctt ggaagaagaa ggtgggggaag tggcaaaagc cgatccctag	360

ggccctgtga agttcgggagc cttccctgta cagcactggc tcatagatcc tctccagcc	420
aaacatagca agaagtgata cctcctttgt gacttcccca ggcccagtac ctgtcaggtt	480
gaaacaggat ttagagaagc ctctgaactc acctgaactc tgaagctcat ccaccaagca	540
agcacctagg tgccactgct agttagtatt ctacgctgat aatatgcaga gctggggccac	600
agaagtcctg ggggtgtagga actgaccagt gacttttcag tcggcaaagg tatgaccccc	660
tcagcagatg tagtaatgtc cccttagatc ccatcccagg caggtctcta agaggacatg	720
ggatgagaga tgtagtcatg tggcattcca aacacagcta tccacagtgt cccttgcccc	780
ttccacttag ccaggaggac agtaacctta gcctatcttt cttcctcccc atcctccag	840
gacacacccc ctgggtctgca gtattcattt cttccttcac gtcccctctg tgacttccat	900
ttgcaaggct tttgacctct gcagctgctg gaagatagag tttggcccta ggtgtggcaa	960
gccatctcaa gagaaagcag acaacagggg gaccagattt tggaaggatc aggaactaaa	1020
tcactggcgg gcctgggggt agaaaaaaga gtgagtgagt ccgctccagc taagccaagc	1080
tagtccccga gatactctgc cacagctggg ctgctcgggg tagctttagg aatgtgggtc	1140
tgaaagacaa tgggattgga agacatctct ttgagtctcc cctcaacccc acctacagac	1200
acactcgtgt gtggccagac tctgttcaa cagccctctg tgttctgacc actgagctag	1260
gcaaccagag catgggccct gtgctgagga tgaagagttg gttaccaata gcaaaaacag	1320
caggggaggg agaacagaga acgaaataag gaaggaagaa ggaaaggcca gtcaatcaga	1380
tgcagtcaga agagatggga agccaacaca cagcttgagc agaggaaaca gaaaaggag	1440
agattctggg cataaggagg ccacagaaag aagagcccag gcccccaag tctcctcttt	1500
ataccctcat cccgtctccc aattaagccc actcttcttc ctagatcaga cctgagctgc	1560
agcgaagaga cccgtaggga ggatcacact ggatgaagga gatgtgtgga gaagtccagg	1620
gcaacctaa agccagagcc taaaagagca agagataaag gtgcttcaaa ggtggccagg	1680
ctgtgcacac agagggtcga ggactggtgg tagagcctca agataaggat gatgctcaga	1740
atgggcgggg ggggggattc tggggggggg agagagaagg tgagaaggag cctggaacag	1800
agaatctgga agcgttgga acgataccat aaagggaaga acccaggcta cctttagatg	1860
taaatcatga aagacaggga gaagggaagc tggagagagt agaaggaccc cggggcaaga	1920
catggaagca aggacaagcc aggttgagcg ctccgtgaaa tcagcctgct gaaggcagag	1980
ccctggtatg agcaccagaa cagcagaggc tagggttaat gtcgagacag ggaacagaag	2040
gtagacacag gaacagacag agacggggga gccaggtaac aaaggaatgg tcttctcac	2100
ctgtggccag agcgtccatc tgtgtccaca tactctagaa tgttcatcag actgcagggc	2160
tggcttgga ggcagctgga aagagtatgt gagagccagg ggagacaagg gggcctagga	2220

aaggaagaag	agggcaaacc	aggccacaca	agagggcaga	gcccagaact	gagttaactc	2280
cttccttggt	gcattctcca	taggaggcag	tgggaactct	gtgaccacca	tcccccatga	2340
gccccacta	cccatacca	gtttggcctg	agtggcattc	taggttcctt	gaggacagag	2400
cctggccttt	gtctcttgga	cctgacccaa	gctgacccaa	tgttctcagt	accttatcat	2460
gccctcaaga	gcttgagaac	caggcagtga	catattaggc	catgggctaa	ccctggagct	2520
tgcacacagg	agcctcaagt	gacctccagg	gacacagctg	cagacaggtg	gcctttatcc	2580
ccaaagagca	accatttggt	ataggtggct	gcaaattgga	atgcaagggt	gaatcagggtc	2640
ccttcaagaa	tactgcatgc	aagacctaag	acccctggag	agaggggtat	gctcctgccc	2700
ccaccaccca	taaggggagt	gaactatcct	agggggctgg	cgaccttggg	gagacaccac	2760
attactgaga	gtgctgagcc	cagaaaaact	gaccgcccctg	tgtcctgccc	acctccacac	2820
tctagagcta	tattgagagg	tgacagtaga	taggggtgga	gctggtagca	gggagagtgt	2880
tcctgggtgt	gaggggtgtg	gggaaagcca	gagcagggga	gtctggcttt	gtctcctgaa	2940
cacaatgtct	acttagttat	aacaggcatg	acctgctaaa	gacccaacat	ctacgacctc	3000
tgaaaagaca	gcagccctgg	aggacagggg	ttgtctctga	gccttgggtg	cttgatgggtg	3060
ccacaaagga	gggcatgagt	gtgagtataa	ggccccagga	gcgttagaga	agggcacttg	3120
ggaaggggtc	agtctgcaga	gcccctatcc	atggaatctg	gagcctgggg	ccaactgggtg	3180
taaatctctg	ggcctgccag	gcattcaaag	cagcacctgc	atcctctggc	agcctgggga	3240
ggcggaaggg	agcaaccccc	catttatacc	ctttctccct	cagccccagg	attaacacct	3300
ctggccttcc	cccttcccac	ctcccatcag	gagtggaggg	ttgcagaggg	agggtaaaaa	3360
cctacatgtc	caaacatcat	ggtgcacgat	atatggatca	gtatgtgtag	aggcaagaaa	3420
ggaaatctgc	aggcttaact	gggttaatgt	gtaaagtctg	tgtgcatgtg	tgtgtgtctg	3480
actgaaaacg	ggcatggctg	tgacagctgt	cagttctgtg	cgtgaggtta	ccagactgca	3540
ggtttgtgtg	taaattgccc	aaggcaaagt	gggtgaatcc	cttccatggg	ttaaagagat	3600
tggatgatgg	cctgcatctc	aaggaccatg	gaaaatagaa	tggacactct	atatgtgtct	3660
ctaagctaag	gtagcaaggt	ctttggagga	cacctgtcta	gagatgtggg	caacagagac	3720
tacagacagt	atctgtacag	agtaaggaga	gagaggaggg	ggtgtagaat	tctcttacta	3780
tcaaagggaa	actgagtcgt	gcacctgcaa	agtggatgct	ctccctagac	atcatgactt	3840
tgtctctggg	gagccagcac	tgtggaactt	caggtctgag	agagtaggag	gctccccctca	3900
gcctgaagct	atgcagatag	ccagggttga	aagggggaag	ggagagcctg	ggatgggagc	3960
ttgtgtgttg	gaggcagggg	acagatatata	agcctggaag	agaagggtgac	ccttaccacg	4020

ttgttcaact cacccttcag attaaaaata actgaggtaa gggcctgggt aggggaggtg	4080
gtgtgagacg ctctgtctc tcctctatct gcccatcggc cctttgggga ggaggaatgt	4140
gccaaggac taaaaaaagg ccatggagcc agaggggga gggcaacaga cttttcatgg	4200
gcaaaccttg gggccctgct gtctctctgt cacctccaga gccaaaggat caaaggagga	4260
ggagccagga caggagggaa gtgggagggg ggggtcccagc agaggactcc aaatttaggc	4320
agcaggcata tgggatggga tataaagggg ctggagcact gagagctgtc agagatttct	4380
ccaaccagg taagaggag tttcgggtgg gggctcttca cccacaccag acctctcccc	4440
acctagaagg aaactgcctt tcctggaagt ggggttcagg ccggtcagag atctgacagg	4500
gtggccttcc accagcctgg gaagttctca gtggcaggag gtttcacaa gaaacactgg	4560
atgccccttc ccttacgctg tcttctccat ctctctctg gggatgctcc tccccgtctt	4620
ggtttatctt ggctcttcgt cttcagcaag atttgcctg tgctgtccac tccatctttc	4680
tctactgtct ccgtgccttg ccttgccctc ttgctgtcc ttcctttcca cccatttctc	4740
acttcacctt ttctccctt ctcatttgta ttcctcttc cttccttctt tccttcttc	4800
cttcttctt tccttcttc ctttctctt tccttcttc cttccttctt tccttcttc	4860
cttcttctt gtgtcagagt gctgagaatc acacctgggg ttcccacct tatgtaaaca	4920
atcttccagt gagccacagc ttcagtgtg ctgggtgtc tcttacctc ctcacccct	4980
ggcttgtctt gttccatctt ggtcaggatc tctagattgg tctccagcc tctgtactc	5040
ctcttctgc ctgttctct ctctgtccag ctgcgccact gtggtgcctc gttccagctg	5100
tggtccacat tcttcaggat tctctgaaaa gttaaccagg tgagaatgtt tcccctgtag	5160
acagcagatc acgattctcc cggaagtcag gcttccagcc ctctctttct ctgcccagct	5220
gcccggcact cttagcaaac ctcaggcacc cttacccac atagacctct gacagagaag	5280
caggcacttt acatggagtc ctgggtgggag agccataggc tacgggtgtaa aagaggcagg	5340
gaagtgggtg ttaggaaag tcaggacttc acatagaagc ctagccaca ccagaaatga	5400
cagacagatc cctcctatct cccccataag agtttgagtc gac	5443

<210> 2

<211> 6298

<212> DNA

<213> Mus musculus

<220>

<221> promoter

<222> (1)..(5445)

<223> ventricular myosin regulatory light chain gene (AF302688)

<220>

<221> 5'UTR

<222> (5446)..(5486)

<223> exon 1

<220>

<221> exon

<222> (5487)..(5489)

<223> exon 1

<220>

<221> exon

<222> (6209)..(6298)

<223> exon 2

<400> 2

ctcgagtgct gggattaaag gcatgcacca ccatgctcag cctgttttct tttttaagag	60
ttaatctttt taattatgtg tatgtatgtc tttgcatgga tatgcccacg agagtgcag	120
tgccctggaa gaccagaagg gggtgacaaa cccctgcagt ttgagcctc ctggcctggg	180
tgctgggaat caaacttaat ttctctagaa gagcagagtc ctcttaacac ccaagccctc	240
ttgccagccc ttattttggt tggttggttg gtttttgcca aagctaggag ttccagcccc	300
agtcttttat actctgccct catggcttct gacatctcca actctgccag gggctgactc	360
ttatcttcag aaagcaattg ttactttgac ccccagcagt gctgagccac caccagggc	420
ctgaggctag aagaaaatgt accctccttc catggtcac ttcagaaagc actgtgaacc	480
caggtaaagg tagcaggtcc aggttcagat gtagtgtcca cagcctgtgc aaaaaggacc	540
cttcacttcc aagcttgccc cacctgatca gaccactctc cagatctggg ggaaacggta	600
gcaggctctt caccccaaca ggagtcccca gggcacacaa gatattgcct ttgattttgt	660

ccttatgaca accctgcgaa taaaatcgtc atcatgocca ctctacagat tagaatactg	720
aagctgagag caaaaaccta cctgatgtca cactgctgct caatgactaa gcaacgaaaa	780
tcaaaagtga atattcccg c aggctccagt cttgcagatg acaaatgctc tgtcaccgctc	840
acatttgggg ccatgttctg aaatcctctg ttttcacctc cctagaaccc cagatagtag	900
ctaaatagct gagtccattc acctggccct ggctttctgc taaggaatat gtcagacatc	960
ttcaggattc ttcaaacttg ttctgagtag aaatctcttc aggcctggga gctgtttcct	1020
ctcagcagaa agcccccatg tggcacaggc caactcccc acaaccagaa ccatcatcag	1080
tcacaactgc acttcctctc atgccgaaga aacttttttt ttcagtcttg gatggatgct	1140
ggaaccatcg gatcctgtaa cccgcttctc cacctccagt acagacgtca ggacttgagg	1200
ctccctccgt ctgctctctt ctgcactgca cttgaatttc cctgagggtt ggcatttggg	1260
gtttttgttt ggcttgtttc tttgcttgcc tagaggaata atcaatgctt aggcctttta	1320
tagcaaaggc atttagtggg tcaaccaagc actcaggaga tagacaggag ggtcagaatt	1380
caaggctcct ctttgctaca caatgagttc agggtcagcc tgggctacac gagatccaat	1440
ctaaaataaa caaaaaataa aataattgat atttcttctc tgtatattat agttatactg	1500
tagactgttg gggatacatt ctccaagagt ctcaaagttc atctccactg agttaattaa	1560
tgttgttact ataacacaac actagagtct ggttcgttta caaatacaaa agattttattt	1620
tgggctggag agatggctca gagctgactg ctcttccaaa ggtcctgagt tccaatccca	1680
gcaaccacat ggtggctcga aaccatctgt aatgggatct gatgccttct tctagtgtgt	1740
ctgaagacag ctatggtgta ctcacataca taaaataaat aaataaatct taagagagag	1800
atgtgtttct acaaaggcta gatgctactg agagtaaagg gtttagaact ccgttttctc	1860
cttcttacta actcactaat cccatcttgg gggggggagg gggaagcttc atgacttcac	1920
ctaacctcgt tcacctctcc tagaccttac ctctatcgc taccaatctc tgatttgggg	1980
atcaaatttt caaccagga gctttaggga gacaaatgta aaccccgta tcccctgact	2040
cccggtgtac actggatcct gcacacagta gggctccaat aaatactgaa agtccttaga	2100
atgggggcaa aatcattttt gtgtttataa atatgacca catgttctct catcttttaa	2160
aattgtcaga gtaatttctc tctctctctc tctctctctc tctgtgtgtg tgtgtgtgtc	2220
tgtgtctgtg tgtgtgtctg tgtctgtgtc tgtgtgtctg tgtgtgtgta ctcacatcca	2280
agtgggtttg ggtacctgtc atgtggacat gtatatgttg gtagaagcca gaagtcaacc	2340
ttgtgtgtca tttctcagag gtgatccatc ttattttttg agacagggtc tctcactgag	2400
gccggggact tactgttttt aggttacacc tgctggccag caagccagag agaccgagag	2460
agacggtctg tctccatctc tccagcgaca ggctttcaga cccacaccac catgcccagc	2520

tttgatgtgg	gtctggggtt	tgaggagtag	aattcaggac	ctcttgctga	gccatctccc	2580
cagccactga	acataattca	tatataatct	ggcttttggt	ccttttggtg	gtgcaggggtg	2640
tgttttggtt	tggtctttgc	tgtgtattat	tctgtgcatt	taagcttttt	ttttttgtga	2700
ctacctggga	gggacactga	acagccagaa	aggccaggcc	gaggcttcac	tgatggggat	2760
gtgagcccgg	gaatgctggc	agctgccggg	agctggaaag	ggcaaaggaa	aggactgtct	2820
ccgcatccac	ggtggacgca	gccctctgcc	cgatttctat	ttctggccac	cagctctgcc	2880
aggtagcgag	cttggctgct	ctgagctgcc	tgggtttgcc	gttgtatttt	cctactagca	2940
tgggaaagcg	tgatcagctt	gctttgttct	caattgttcc	agaagctctg	ccgggtccct	3000
ccaggactcc	tgagtctctg	ctccgtggta	ctcggggctg	gctctcaaag	ttctaggctg	3060
cagaaatctc	acaagcgcac	gagcttagag	tcccaggggtg	gatgtccacc	aagagcccag	3120
ggacaaagca	ttgacagctc	ctgtgtgcgc	cacgtctccc	cccaccccca	cccctacccc	3180
caggaactgt	gagaggagtg	cagagcccct	cccccaggcc	ttccaacaa	ggactcctgg	3240
aggacccttg	ggtttttaac	accaaatac	caaatagttc	ccacgcagca	acacaaacca	3300
gctcttcctc	atacagcacg	gtggggcagt	ggaccatggg	gacagggtac	ctctgtgggc	3360
ccaggctcac	ggtaaactct	aacctcaatc	tgtagcctcc	cacagccatt	tgcggggtcac	3420
cttgcttctc	agccaccgtg	tggcacttgg	caagtcacgt	gtgcctcaac	acaataagaa	3480
gccaagggaa	taggggcttt	gcttaactgg	tacagcagtg	tagcccaagc	tagccttgaa	3540
ctcactatgt	agccaaggac	gatacataaac	tcttgatcct	cccgttccag	agtctcgggt	3600
gttgagataa	caggtgtggg	tcactcccta	cccttcttct	aatagcaatc	aatgtgtggc	3660
cacatgtttg	tgcctcacag	attaaaacca	tcttgacctg	aggacgaaat	gactaacagt	3720
tgcctcctga	aggttgcctg	gatctcatct	ttataatccc	agcaatcaag	gggagtgggg	3780
gatcaggagt	tcaaagtcag	cccagcctgg	gtacatgag	accctgtctt	gaaaaatgga	3840
ggaattaagc	tgggcgtggg	gccgcactcc	tttaatccca	gcacttgga	ggtagaggca	3900
ggcggacttc	tgagttcgag	gccagcctgg	tctacaaagt	gagttccagg	acagccacag	3960
ctatacagag	aaaccctgtc	tcgaaaaacc	agaaagaaag	aaagagagaa	agaaagaaag	4020
aaagaaagaa	agaaagaaag	aaagaaagga	aggaaggaag	gaaggaagga	aaggaagga	4080
ggaaggaagg	aaagaaagaa	agaaagaaag	aaagaaagac	agacagaaag	aaagggttagg	4140
aaagaaagaa	aggaaaagaa	agaaagaaag	aaagaaagaa	agaaagaaag	aaagaaagaa	4200
agacagaaag	aaagggttgg	aaagaaagaa	aggaaaagaa	agaaagaaag	agagaaagag	4260
agaaagaaag	aaagaaaaga	aaagagagaa	aagaaaagaa	aagaaaagaa	aagaaaagaa	4320



agaaaaaaaa	gaaaagaaaa	gaaagaaaag	aaaaggaagg	aagaaaagaa	aagaaaaatg	4380
gaggagttaa	ccctatgttt	cctttttttt	tattcatcat	tggtgaggct	atcctcagct	4440
acatatcaag	ttcaagccag	cctgggctac	atgagaccct	gcctcaaaaa	agaaaaggag	4500
ccagtgtagc	gacatactcc	cgctctccca	gcacttgggg	gacagaggct	actccactgc	4560
tgtctccagc	agccggcctg	cctccctgag	cctcattttt	ttcataacat	ggggacccaa	4620
ctgctaaggt	gaccttgctc	ccatgggggtg	actggagact	tgagagtga	gtgggttatca	4680
tttgtccagt	ctgtgaacaa	atggcagcct	ccaagggtgt	tttgtgttca	aaggaggaca	4740
tgggacaggg	agaggccagg	gagaagagcc	caccctcagg	agtaggctgt	ccccgtgaag	4800
ctgggtgggg	acaaaaagca	gagaagcaga	ggcagaggac	aagcgtgggt	gacatttgag	4860
caaagatggg	aatgtgccag	aggctgcccc	agatgtgcat	gtgcaaaggc	cctgaggtgc	4920
aagggtgcct	ggatccagag	ccaaaagctc	aggtccctc	ctcctcttcc	tcctcttctc	4980
cctcttctc	ctctttctcc	tctccctcct	ctccctctc	ccccttctc	ttctctctcc	5040
cttctctctc	ttccttctcc	ccttcttctc	cctccctctc	ctcctctctc	tcctctctgt	5100
cctcctctc	ctcctctctc	tcctctctct	gtcctctctc	ctcctctctc	tgggttactc	5160
ttccccatta	gacaatggca	gggaagagag	cacaccccat	catccccagg	ccaggcccca	5220
gccactgact	ctttaacctt	gaaggcattt	ttgggtctca	cgtgtccacc	caggcgggtg	5280
gccgcctttg	agcagctctt	acttcagaag	aacggcatgg	agtggggggg	ggggggctta	5340
ggtggcctcc	gcctcaccta	caactgcccc	aagtgggtcat	gggggttattt	ttaacccag	5400
gggagaggta	tttattgttc	cacagcaggg	gcagaggcca	gcaggctcct	cgaactctcc	5460
agaggtggca	actggcctca	gacacc	atg	gtgagtggtc	agtaaaccct	5519
		Met				
		1				
cgcagggtgg	ggagcagaga	gataaccccc	tccaagcca	agcaccccat	ggaggagggg	5579
gggaggagga	ggggaaggag	gagggaagct	ctcttacgag	ccccctagcc	ctagatggac	5639
cagcaccttg	caccctctga	gggaacccaa	tcagctcccc	taaggagcca	caaatagcag	5699
ctcctcaagg	aacttgcaaa	aatcaatgag	aatgcgctt	gggggatggg	tgcccactac	5759
ctgatctcaa	gaaatcagta	acaccccacc	cccacccac	ccagagcttg	ccaaacggag	5819
actgagagct	tttaagggtc	gaattgtaat	tcttttccca	attcaggtgg	ccaggaagag	5879
gttttctggt	tctctctttt	gaatattccc	cttgaaatat	ttgtgcccgc	ctcccagaac	5939
aggtagcccc	cagctgctag	agactgcagc	taaggggccc	agagtgtacg	tgtgtgtggc	5999
tgtgtgatct	agagaagtga	ctcaccctct	ctgagcctcc	agtctcctta	gtggagcaga	6059
ggagagcatt	agataatggt	tggaggtttt	ggggatatcat	ttcgccctgc	atgttgtctg	6119

ggtaccagag actcactccc caggtgacag gtccctggccc aggtcctgat ccagaggctc 6179

cacagtgtct gatggatatt cctctccag gca cca aag aaa gcc aag aag cgg 6232  
 Ala Pro Lys Lys Ala Lys Lys Arg  
 5

ata gaa ggc ggg agc tcc aac gtg ttc tcc atg ttt gag cag acc cag 6280  
 Ile Glu Gly Gly Ser Ser Asn Val Phe Ser Met Phe Glu Gln Thr Gln  
 10 15 20 25

atc cag gag ttc aag gaa 6298  
 Ile Gln Glu Phe Lys Glu  
 30

<210> 3

<211> 10475

<212> DNA

<213> Artificial Sequence

<220>

<223> composite vector

<220>

<221> promoter

<222> (77)..(5517)

<223> 77-5517 Mus musculus alpha myosin heavy chain gene, promoter regi  
 on (Acc. No. U71441)

<220>

<221> CDS

<222> (5558)..(7117)

<223> SEAP

<220>

<221> rep\_origin

<222> (9750)..(10393)

<223> pUC plasmid replication origin

<220>

<221> polyA\_signal

<222> (9401)..(9406)

<223> Herpes simplex virus thymidine kinase polyadenylation signal

<220>

<221> polyA\_signal

<222> (9414)..(9419)

<223> Herpes simplex virus thymidine kinase polyadenylation signal

<220>

<221> terminator

<222> (9163)..(9165)

<223> Kanamycin/neomycin resistance gene

<220>

<221> ATG

<222> (8371)..(8373)

<223> Kanamycin/neomycin resistance gene

<220>

<221> promoter

<222> (8242)..(8248)

<223> SV40 early promoter element

<220>

<221> repeat\_region

<222> (8167)..(8230)

<223> SV40 early promoter

<220>

<221> enhancer

<222> (8018)..(8163)

<223> SV40 early promoter

<220>

<221> rep\_origin

<222> (8187)..(8322)

<223> SV40 origin of replication

<220>

<221> -10\_signal

<222> (7931)..(7936)

<223> Ampicillin resistance (b-lactamase) promoter

<220>

<221> -35\_signal

<222> (7908)..(7913)

<223> Ampicillin resistance (b-lactamase) promoter

<220>

<221> polyA\_signal

<222> (7294)..(7299)

<223> SV40 early mRNA polyadenylation signal

<220>

<221> polyA\_signal

<222> (7323)..(7328)

<223> SV40 early mRNA polyadenylation signal

<220>

<221> mature protein

<222> (5609)..(7114)

<223> SEAP

<220>

<221> start codon

<222> (5558)..(5560)

<223> ATG of the Secreted alkaline phosphatase (SEAP) gene

<220>

<221> sig\_peptide

<222> (5558)..(5608)

<223> SEAP

<400> 3

tagttattac tagcgctacc ggactcagat ctcgagctca agcttcgaat tctgcagtcg	60
acggtaccgc gggcccgatc ctgcaagggt acacaagggt ctccaccac caggtgccct	120
agtctcaatt tcagtttcca tgccttggtc tcacaatgct ggctcccca gagctaattt	180
ggactttggt tttatttcaa aagggcctga atgaggagta gatcttggtc taccagctc	240
taaggggtgcc cgtgaagccc tcagacctgg agcctttgca acagcccttt aggtggaagc	300
agaataaagc aattttcctt aaagccaaaa tcctgcctct agactcttct tctctgacct	360
cgggtccctgg gctctagggt ggggagggtg ggcttggaag aagaagggtg ggaagtggca	420
aaagccgac cctagggccc tgtgaagttc ggagccttc ctgtacagca ctggctcata	480
gacctcctc cagccaaaca tagcaagaag tgatacctcc tttgtgactt cccagggccc	540
agtacctgtc aggttgaaac aggatttaga gaagcctctg aactcacctg aactctgaag	600
ctcatccacc aagcaagcac ctaggtgcc ctgctagtta gtatcctacg ctgataatat	660
gcagagctgg gccacagaag tcctgggggtg taggaactga ccagtgactt ttcagtcggc	720
aaaggatatga cccctcagc agatgtagta atgtcccctt agatcccatc ccaggcaggt	780
ctctaagagg acatgggatg agagatgtag tcatgtggca ttccaaacac agctatccac	840
agtgtccctt gcccttcca cttagccagg aggacagtaa ccttagccta tctttcttcc	900
tccccatcct cccaggacac accccctggt ctgcagtatt catttcttcc ttcacgtccc	960

ctctgtgact	tccatttgca	aggcttttga	cctctgcagc	tgctggaaga	tagagtttgg	1020
ccctaggtgt	ggcaagccat	ctcaagagaa	agcagacaac	agggggacca	gattttggaa	1080
ggatcaggaa	ctaaatcact	ggcgggcctg	ggggtagaaa	aaagagtgag	tgagtccgct	1140
ccagctaagc	caagctagtc	cccagatac	tctgccacag	ctgggctgct	cggggtagct	1200
ttaggaatgt	gggtctgaaa	gacaatggga	ttggaagaca	tctctttgag	tctccctca	1260
acccaccta	cagacacact	cgtgtgtggc	cagactcctg	ttcaacagcc	ctctgtgttc	1320
tgaccactga	gctaggcaac	cagagcatgg	gccctgtgct	gaggatgaag	agttgggttac	1380
caatagcaaa	aacagcaggg	gagggagaac	agagaacgaa	ataaggaagg	aagaaggaaa	1440
ggccagtcaa	tcagatgcag	tcagaagaga	tgggaagcca	acacacagct	tgagcagagg	1500
aaacagaaaa	gggagagatt	ctgggcataa	ggaggccaca	gaaagaagag	cccaggcccc	1560
ccaagtctcc	tctttatacc	ctcatcccgt	ctcccaatta	agcccactct	tcttcctaga	1620
tcagacctga	gctgcagcga	agagaccctg	agggaggatc	acactggatg	aaggagatgt	1680
gtggagaagt	ccagggcaac	ctaagagcca	gagcctaaaa	gagcaagaga	taaaggtgct	1740
tcaaaggtgg	ccaggctgtg	cacacagagg	gtcgaggact	ggtggtagag	cctcaagata	1800
aggatgatgc	tcagaatggg	cggggggggg	gattctgggg	gggggagaga	gaaggtgaga	1860
aggagcctgg	aacagagaat	ctggaagcgc	tggaaacgat	accataaagg	gaagaacca	1920
ggctaccttt	agatgtaaat	catgaaagac	agggagaagg	gaagctggag	agagtagaag	1980
gaccccgggg	caagacatgg	aagcaaggac	aagccagggt	gagcgtccg	tgaaatcagc	2040
ctgctgaagg	cagagccctg	gtatgagcac	cagaacagca	gaggctaggg	ttaatgtcga	2100
gacagggaac	agaaggtaga	cacaggaaca	gacagagacg	ggggagccag	gtaacaaagg	2160
aatggctcct	ctcacctgtg	gccagagcgt	ccatctgtgt	ccacatactc	tagaatgttc	2220
atcagactgc	agggctggct	tgggaggcag	ctggaaagag	tatgtgagag	ccaggggaga	2280
caagggggcc	taggaaagga	agaagagggc	aaaccaggcc	acacaagagg	gcagagccca	2340
gaactgagtt	aactccttcc	ttgttgcatc	ttccatagga	ggcagtggga	actctgtgac	2400
caccatcccc	catgagcccc	cactacccat	accaagtttg	gcctgagtgg	cattctaggt	2460
tccctgagga	cagagcctgg	cctttgtctc	ttggacctga	ccaagctga	cccaatgttc	2520
tcagtacctt	atcatgccct	caagagcttg	agaaccaggc	agtgacatat	taggccaatgg	2580
gctaaccctg	gagcttgcac	acaggagcct	caagtgacct	ccagggacac	agctgcagac	2640
aggtggcctt	tatccccaaa	gagcaaccat	ttggcatagg	tggctgcaaa	tgggaatgca	2700
aggttgaatc	aggtcccttc	aagaatactg	catgcaagac	ctaagacccc	tggagagagg	2760
ggtatgctcc	tgccccacc	caccataagg	ggagtgaact	atcctagggg	gctggcgacc	2820

ttggggagac	accacattac	tgagagtgct	gagcccagaa	aaactgaccg	ccctgtgtcc	2880
tgcccacctc	cacactctag	agctatat	agaggtgaca	gtagataggg	tgggagctgg	2940
tagcagggag	agtgttcctg	ggtgtgaggg	tgtaggggaa	agccagagca	ggggagtctg	3000
gctttgtctc	ctgaacacaa	tgtctactta	gttataacag	gcatgacctg	ctaaagaccc	3060
aacatctacg	acctctgaaa	agacagcagc	cctggaggag	aggggttgtc	tctgagcctt	3120
gggtgcttga	tggtgccaca	aaggagggca	tgagtgtgag	tataaggccc	caggagcgtt	3180
agagaagggc	acttgggaa	gggtcagctc	gcagagcccc	tatccatgga	atctggagcc	3240
tggggccaac	tggtgtaaat	ctctgggcct	gccaggcatt	caaagcagca	cctgcacctc	3300
ctggcagcct	ggggaggcgg	aaggagagca	ccccccactt	ataccctttc	tccctcagcc	3360
ccaggattaa	cacctctggc	cttccccctt	cccacctccc	atcaggagtg	gaggggttgc	3420
gagggagggg	aaaaacctac	atgtccaaac	atcatggtgc	acgatatatg	gatcagtatg	3480
tgtagaggca	agaaaggaaa	tctgcaggct	taactgggtt	aatgtgtaaa	gtctgtgtgc	3540
atgtgtgtgt	gtctgactga	aaacgggcat	ggctgtgcag	ctgttcagtt	ctgtgcgtga	3600
ggttaccaga	ctgcaggttt	gtgtgtaaat	tgcccaaggc	aaagtgggtg	aatcccttcc	3660
atggttttaa	gagattggat	gatggcctgc	atctcaagga	ccatggaaaa	tagaatggac	3720
actctatatg	tgtctctaag	ctaaggtagc	aaggctcttg	gaggacacct	gtctagagat	3780
gtgggcaaca	gagactacag	acagtatctg	tacagagtaa	ggagagagag	gaggggggtg	3840
agaattctct	tactatcaaa	gggaaactga	gtcgtgcacc	tgcaaagtgg	atgctctccc	3900
tagacatcat	gactttgtct	ctggggagcc	agcactgtgg	aacttcaggt	ctgagagagt	3960
aggaggctcc	cctcagcctg	aagctatgca	gatagccagg	gttgaaaggg	ggaagggaga	4020
gcctgggatg	ggagcttgtg	tgttggaggc	aggggacaga	tattaagcct	ggaagagaag	4080
gtgacctta	cccagttgtt	caactcacc	ttcagattaa	aaataactga	ggtaaggggc	4140
tgggtagggg	aggtggtgtg	agacgctcct	gtctctcctc	tatctgcca	tcggcccttt	4200
ggggaggagg	aatgtgcca	aggactaaaa	aaaggccatg	gagccagagg	ggcgagggca	4260
acagaccttt	catgggcaaa	ccttggggcc	ctgctgtcct	cctgtcacct	ccagagccaa	4320
gggatcaaag	gaggaggagc	caggacagga	gggaagtggg	agggaggggtc	ccagcagagg	4380
actccaaatt	taggcagcag	gcatatggga	tgggatataa	aggggctgga	gcaactgagag	4440
ctgtcagaga	tttctccaac	ccaggtaaga	gggagtttcg	ggtgggggct	cttcacccac	4500
accagacctc	tccccaccta	gaaggaaact	gcctttcctg	gaagtggggg	tcaggccggg	4560
cagagatctg	acaggggtgg	cttccaccag	cctgggaagt	tctcagtggc	aggaggtttc	4620

cacaagaaac actggatgcc ccttccttta cgtgtgttcc tccatcttcc tccctggggat	4680
gctcctcccc gtcttggttt atcttggttc ttcgtcttca gcaagatttg cccctgtgctg	4740
tccactccat ctttctctac tgtctccgtg ccttgcccttg ccttcttgcg tgccttccct	4800
ttccacccat ttctcacttc accttttctc cctttctcat ttgtattcat ccttccttcc	4860
ttccttccct ccttccttcc ttcccttccct ccttccttcc tcccttccct ccttccttcc	4920
ttccttccct ccttccttcc ttccctgtgtc agagtgtgga gaatcacacc tgggggttccc	4980
acccttatgt aaacaatctt ccagtgtgac acagcttcag tgctgtggtg tgctctctta	5040
ccttcctcac cccctggctt gtccgtgttc atccctgtga ggatctctag attggtctcc	5100
cagcctctgc tactcctctt cctgcctgtt cctctctctg tccagctgcg cactgtgtgt	5160
gcctcggttc agctgtgtgt cacattcttc aggattctct gaaaagttaa ccagggtgaga	5220
atgtttcccc tgtagacagc agatcacgat tctcccggaa gtcaggcttc cagccctctc	5280
tttctctgcc cagctgcccg gcactcttag caaacctcag gcacccttac cccacataga	5340
cctctgacag agaagcaggc actttacatg gagtccctgt gggagagcca taggctacgg	5400
tgtaaaagag gcagggaagt ggtggtgtag gaaagtcagg acttcacata gaagcctagc	5460
ccacaccaga aatgacagac agatccctcc tatctcccc ataagagttt gagtcgaggg	5520
atctaagcag aagcttcgaa tcgcgaattc gccacc atg ctg ctg ctg ctg ctg	5575
Met Leu Leu Leu Leu Leu	
1 5	
ctg ctg ggc ctg agg cta cag ctc tcc ctg ggc atc atc cca gtt gag	5623
Leu Leu Gly Leu Arg Leu Gln Leu Ser Leu Gly Ile Ile Pro Val Glu	
10 15 20	
gag gag aac ccg gac ttc tgg aac cgc gag gca gcc gag gcc ctg ggt	5671
Glu Glu Asn Pro Asp Phe Trp Asn Arg Glu Ala Ala Glu Ala Leu Gly	
25 30 35	
gcc gcc aag aag ctg cag cct gca cag aca gcc gcc aag aac ctc atc	5719
Ala Ala Lys Lys Leu Gln Pro Ala Gln Thr Ala Ala Lys Asn Leu Ile	
40 45 50	
atc ttc ctg ggc gat ggg atg ggg gtg tct acg gtg aca gct gcc agg	5767
Ile Phe Leu Gly Asp Gly Met Gly Val Ser Thr Val Thr Ala Ala Arg	
55 60 65 70	
atc cta aaa ggg cag aag aag gac aaa ctg ggg cct gag ata ccc ctg	5815
Ile Leu Lys Gly Gln Lys Lys Asp Lys Leu Gly Pro Glu Ile Pro Leu	
75 80 85	
gcc atg gac cgc ttc cca tat gtg gct ctg tcc aag aca tac aat gta	5863
Ala Met Asp Arg Phe Pro Tyr Val Ala Leu Ser Lys Thr Tyr Asn Val	
90 95 100	
gac aaa cat gtg cca gac agt gga gcc aca gcc acg gcc tac ctg tgc	5911
Asp Lys His Val Pro Asp Ser Gly Ala Thr Ala Thr Ala Tyr Leu Cys	
105 110 115	



ggg gtc aag ggc aac ttc cag acc att ggc ttg agt gca gcc gcc cgc Gly Val Lys Gly Asn Phe Gln Thr Ile Gly Leu Ser Ala Ala Ala Arg 120 125 130	5959
ttt aac cag tgc aac acg aca cgc ggc aac gag gtc atc tcc gtg atg Phe Asn Gln Cys Asn Thr Thr Arg Gly Asn Glu Val Ile Ser Val Met 135 140 145 150	6007
aat cgg gcc aag aaa gca ggg aag tca gtg gga gtg gta acc acc aca Asn Arg Ala Lys Lys Ala Gly Lys Ser Val Gly Val Val Thr Thr Thr 155 160 165	6055
cga gtg cag cac gcc tcg cca gcc ggc acc tac gcc cac acg gtg aac Arg Val Gln His Ala Ser Pro Ala Gly Thr Tyr Ala His Thr Val Asn 170 175 180	6103
cgc aac tgg tac tcg gac gcc gac gtg cct gcc tcg gcc cgc cag gag Arg Asn Trp Tyr Ser Asp Ala Asp Val Pro Ala Ser Ala Arg Gln Glu 185 190 195	6151
ggg tgc cag gac atc gct acg cag ctc atc tcc aac atg gac att gac Gly Cys Gln Asp Ile Ala Thr Gln Leu Ile Ser Asn Met Asp Ile Asp 200 205 210	6199
gtg atc cta ggt gga ggc cga aag tac atg ttt cgc atg gga acc cca Val Ile Leu Gly Gly Gly Arg Lys Tyr Met Phe Arg Met Gly Thr Pro 215 220 225 230	6247
gac cct gag tac cca gat gac tac agc caa ggt ggg acc agg ctg gac Asp Pro Glu Tyr Pro Asp Asp Tyr Ser Gln Gly Gly Thr Arg Leu Asp 235 240 245	6295
ggg aag aat ctg gtg cag gaa tgg ctg gcg aag cgc cag ggt gcc cgg Gly Lys Asn Leu Val Gln Glu Trp Leu Ala Lys Arg Gln Gly Ala Arg 250 255 260	6343
tat gtg tgg aac cgc act gag ctc atg cag gct tcc ctg gac ccg tct Tyr Val Trp Asn Arg Thr Glu Leu Met Gln Ala Ser Leu Asp Pro Ser 265 270 275	6391
gtg acc cat ctc atg ggt ctc ttt gag cct gga gac atg aaa tac gag Val Thr His Leu Met Gly Leu Phe Glu Pro Gly Asp Met Lys Tyr Glu 280 285 290	6439
atc cac cga gac tcc aca ctg gac ccc tcc ctg atg gag atg aca gag Ile His Arg Asp Ser Thr Leu Asp Pro Ser Leu Met Glu Met Thr Glu 295 300 305 310	6487
gct gcc ctg cgc ctg ctg agc agg aac ccc cgc ggc ttc ttc ctc ttc Ala Ala Leu Arg Leu Leu Ser Arg Asn Pro Arg Gly Phe Phe Leu Phe 315 320 325	6535
gtg gag ggt ggt cgc atc gac cat ggt cat cat gaa agc agg gct tac Val Glu Gly Gly Arg Ile Asp His Gly His His Glu Ser Arg Ala Tyr 330 335 340	6583
cgg gca ctg act gag acg atc atg ttc gac gac gcc att gag agg gcg Arg Ala Leu Thr Glu Thr Ile Met Phe Asp Asp Ala Ile Glu Arg Ala 345 350 355	6631

ggc cag ctc acc agc gag gag gac acg ctg agc ctc gtc act gcc gac Gly Gln Leu Thr Ser Glu Glu Asp Thr Leu Ser Leu Val Thr Ala Asp 360 365 370	6679
cac tcc cac gtc ttc tcc ttc gga ggc tac ccc ctg cga ggg agc tcc His Ser His Val Phe Ser Phe Gly Gly Tyr Pro Leu Arg Gly Ser Ser 375 380 385 390	6727
atc ttc ggg ctg gcc cct ggc aag gcc cgg gac agg aag gcc tac acg Ile Phe Gly Leu Ala Pro Gly Lys Ala Arg Asp Arg Lys Ala Tyr Thr 395 400 405	6775
gtc ctc cta tac gga aac ggt cca ggc tat gtg ctc aag gac ggc gcc Val Leu Leu Tyr Gly Asn Gly Pro Gly Tyr Val Leu Lys Asp Gly Ala 410 415 420	6823
cgg ccg gat gtt acc gag agc gag agc ggg agc ccc gag tat cgg cag Arg Pro Asp Val Thr Glu Ser Glu Ser Gly Ser Pro Glu Tyr Arg Gln 425 430 435	6871
cag tca gca gtg ccc ctg gac gaa gag acc cac gca ggc gag gac gtg Gln Ser Ala Val Pro Leu Asp Glu Glu Thr His Ala Gly Glu Asp Val 440 445 450	6919
gcg gtg ttc gcg cgc ggc ccg cag gcg cac ctg gtt cac ggc gtg cag Ala Val Phe Ala Arg Gly Pro Gln Ala His Leu Val His Gly Val Gln 455 460 465 470	6967
gag cag acc ttc ata gcg cac gtc atg gcc ttc gcc gcc tgc ctg gag Glu Gln Thr Phe Ile Ala His Val Met Ala Phe Ala Ala Cys Leu Glu 475 480 485	7015
ccc tac acc gcc tgc gac ctg gcg ccc ccc gcc ggc acc acc gac gcc Pro Tyr Thr Ala Cys Asp Leu Ala Pro Pro Ala Gly Thr Thr Asp Ala 490 495 500	7063
gcg cac ccg ggt tac tct aga gtc ggg gcg gcc ggc cgc ttc gag cag Ala His Pro Gly Tyr Ser Arg Val Gly Ala Ala Gly Arg Phe Glu Gln 505 510 515	7111
aca tga taagatacat tgatgagttt ggacgcggcc gcgactctag atcataatca Thr	7167
gccataccac atttgtagag gttttacttg ctttaaaaaa cctcccacac ctccccctga	7227
acctgaaaca taaatgaat gcaattggtg ttgttaactt gtttattgca gcttataatg	7287
gttacaaata aagcaatagc atcacaaatt tcacaaataa agcatttttt tcaactgcatt	7347
ctagttgtgg tttgtccaaa ctcatcaatg tatcttaagg cgtaaattgt aagcgttaat	7407
attttggtta aattcgcggt aaatttttgt taaatcagct cattttttta ccaataggcc	7467
gaaatcggca aaatccctta taaatcaaaa gaatagaccg agatagggtt gagggttggt	7527
ccagtttgga acaagagtcc actattaaag aacgtggact ccaacgtcaa agggcgaaaa	7587
accgtctatc agggcgatgg cccactacgt gaaccatcac cctaatacag ttttttgggg	7647
tcgaggtgcc gtaaagcact aaatcggaac cctaaaggga gccccgatt tagagcttga	7707

cggggaaagc	cggcgaacgt	ggcgagaaag	gaagggaaga	aagcgaaagg	agcgggcgct	7767
agggcgctgg	caagtgtagc	ggtcacgctg	cgcgtaacca	ccacacccgc	cgcgcttaat	7827
gcgccgctac	agggcgcgctc	aggtggcact	tttcggggaa	atgtgcgcgg	aaccctatt	7887
tgtttatfff	tctaaataca	ttcaaatacg	tatccgctca	tgagacaata	accctgataa	7947
atgcttcaat	aatattgaaa	aaggaagagt	cctgaggcgg	aaagaaccag	ctgtggaatg	8007
tgtgtcagtt	aggggtgtgga	aagtccccag	gctccccagc	aggcagaagt	atgcaaagca	8067
tgcattctcaa	ttagtcagca	accaggtgtg	gaaagtcccc	aggctcccca	gcaggcagaa	8127
gtatgcaaag	catgcatctc	aattagtcag	caaccatagt	cccgccccta	actccgcccc	8187
tcccgcacct	aactccgccc	agttccgccc	attctccgcc	ccatggctga	ctaatttttt	8247
ttatttatgc	agaggccgag	gccgcctcgg	cctctgagct	attccagaag	tagtgaggag	8307
gcttttttgg	aggcctaggc	ttttgcaaag	atcgatcaag	agacaggatg	aggatcgttt	8367
cgcattgattg	aacaagatgg	attgcacgca	ggttctccgg	ccgcttgggt	ggagaggcta	8427
ttcggtatg	actgggcaca	acagacaatc	ggctgctctg	atgccgccgt	gttccggctg	8487
tcagcgcagg	ggcgcccggg	tctttttgtc	aagaccgacc	tgtccgggtg	cctgaatgaa	8547
ctgcaagacg	aggcagcgcg	gctatcgtgg	ctggccacga	cgggcgttcc	ttgocgagct	8607
gtgctcgacg	ttgtcactga	agcgggaagg	gactggctgc	tattgggcga	agtgccgggg	8667
caggatctcc	tgtcatctca	ccttgctcct	gccgagaaag	tatccatcat	ggctgatgca	8727
atgcggcggc	tgcatacgct	tgatccggct	acctgcccac	tcgaccacca	agcgaaacat	8787
cgcattcgagc	gagcacgtac	tcggatggaa	gccggtcttg	tcgattcagga	tgattctggac	8847
gaagagcatc	aggggctcgc	gccagccgaa	ctgttcgcca	ggctcaaggc	gagcatgccc	8907
gacggcgagg	atctcgtcgt	gacccatggc	gatgcctgct	tgccgaatat	catggtggaa	8967
aatggccgct	tttctggatt	catcgactgt	ggccggctgg	gtgtggcgga	ccgctatcag	9027
gacatagcgt	tggctacccg	tgatattgct	gaagagcttg	gcggcgaaatg	ggctgaccgc	9087
ttctcgtgc	tttacgggat	cgcgcctccc	gattcgcagc	gcattcgctt	ctatcgctt	9147
cttgacgagt	tcttctgagc	gggactctgg	ggttcgaaat	gaccgaccaa	gcgacgcccc	9207
acctgccatc	acgagatttc	gattccaccg	ccgccttcta	tgaaagggtg	ggcttcggaa	9267
tcgttttccg	ggacgcgggc	tggatgatcc	tccagcgcg	ggattctcatg	ctggagttct	9327
tcgcccaccc	tagggggagg	ctaactgaaa	cacggaagga	gacaataaccg	gaaggaaccc	9387
gcgctatgac	ggcaataaaa	agacagaata	aaacgcacgg	tgttgggtcg	ttgttccata	9447
aacgcggggg	tcgggtcccag	ggctggcact	ctgtcgatac	cccaccgaga	ccccattggg	9507

gccaatacgc ccgcgtttct tccttttccc caccaccacc cccaagttcg ggtgaaggcc 9567  
 cagggtcgc agccaacgctc ggggcggcag gccctgccat agcctcaggt tactcatata 9627  
 tacttttagat tgattttaaaa cttcattttt aattttaaaag gatctaggtg aagatccttt 9687  
 ttgataatct catgacaaaa atcccttaac gtgagttttc gttccactga gcgtcagacc 9747  
 ccgtagaaaa gatcaaagga tcttcttgag atcctttttt tctgcgcgta atctgctgct 9807  
 tgcaaaaaaaa aaaaccaccg ctaccagcgg tggtttggtt gccggatcaa gagctaccaa 9867  
 ctctttttcc gaaggtaact ggcttcagca gagcgcagat accaaatact gtccttctag 9927  
 tgtagccgta gttaggccac cacttcaaga actctgtagc accgcctaca tacctcgctc 9987  
 tgctaatect gttaccagtg gctgctgcca gtggcgataa gtcgtgtctt accgggttgg 10047  
 actcaagacg atagttaccg gataaggcgc agcggtcggg ctgaacgggg ggttcgtgca 10107  
 cacagcccag cttggagcga acgacctaca ccgaactgag atacctacag cgtgagctat 10167  
 gagaaagcgc cacgcttccc gaaggagaaa aggcggacag gtatccggta agcggcaggg 10227  
 tcggaacagg agagcgcacg agggagcttc cagggggaaa cgcctgggtat ctttatagtc 10287  
 ctgtcggggtt tcgccacctc tgacttgagc gtcgattttt gtgatgctcg tcaggggggc 10347  
 ggagcctatg gaaaaacgcc agcaacgcgg cctttttacg gttcctggcc ttttgetggc 10407  
 cttttgctca catgttcttt cctgcgttat cccctgattc tgtggataac cgtattaccg 10467  
 ccatgcat 10475

<210> 4

<211> 519

<212> PRT

<213> SEAP

<400> 4

Met Leu Leu Leu Leu Leu Leu Leu Gly Leu Arg Leu Gln Leu Ser Leu  
 1 5 10 15

Gly Ile Ile Pro Val Glu Glu Glu Asn Pro Asp Phe Trp Asn Arg Glu  
 20 25 30

Ala Ala Glu Ala Leu Gly Ala Ala Lys Lys Leu Gln Pro Ala Gln Thr  
 35 40 45

Ala Ala Lys Asn Leu Ile Ile Phe Leu Gly Asp Gly Met Gly Val Ser

50	55	60
Thr Val Thr Ala Ala Arg Ile Leu Lys Gly Gln Lys Lys Asp Lys Leu		
65	70	75 80
Gly Pro Glu Ile Pro Leu Ala Met Asp Arg Phe Pro Tyr Val Ala Leu		
	85	90 95
Ser Lys Thr Tyr Asn Val Asp Lys His Val Pro Asp Ser Gly Ala Thr		
	100	105 110
Ala Thr Ala Tyr Leu Cys Gly Val Lys Gly Asn Phe Gln Thr Ile Gly		
	115	120 125
Leu Ser Ala Ala Ala Arg Phe Asn Gln Cys Asn Thr Thr Arg Gly Asn		
	130	135 140
Glu Val Ile Ser Val Met Asn Arg Ala Lys Lys Ala Gly Lys Ser Val		
145	150	155 160
Gly Val Val Thr Thr Thr Arg Val Gln His Ala Ser Pro Ala Gly Thr		
	165	170 175
Tyr Ala His Thr Val Asn Arg Asn Trp Tyr Ser Asp Ala Asp Val Pro		
	180	185 190
Ala Ser Ala Arg Gln Glu Gly Cys Gln Asp Ile Ala Thr Gln Leu Ile		
	195	200 205
Ser Asn Met Asp Ile Asp Val Ile Leu Gly Gly Gly Arg Lys Tyr Met		
	210	215 220
Phe Arg Met Gly Thr Pro Asp Pro Glu Tyr Pro Asp Asp Tyr Ser Gln		
225	230	235 240
Gly Gly Thr Arg Leu Asp Gly Lys Asn Leu Val Gln Glu Trp Leu Ala		
	245	250 255
Lys Arg Gln Gly Ala Arg Tyr Val Trp Asn Arg Thr Glu Leu Met Gln		
	260	265 270
Ala Ser Leu Asp Pro Ser Val Thr His Leu Met Gly Leu Phe Glu Pro		
	275	280 285
Gly Asp Met Lys Tyr Glu Ile His Arg Asp Ser Thr Leu Asp Pro Ser		
290	295	300

Leu Met Glu Met Thr Glu Ala Ala Leu Arg Leu Leu Ser Arg Asn Pro  
 305 310 315 320

Arg Gly Phe Phe Leu Phe Val Glu Gly Gly Arg Ile Asp His Gly His  
 325 330 335

His Glu Ser Arg Ala Tyr Arg Ala Leu Thr Glu Thr Ile Met Phe Asp  
 340 345 350

Asp Ala Ile Glu Arg Ala Gly Gln Leu Thr Ser Glu Glu Asp Thr Leu  
 355 360 365

Ser Leu Val Thr Ala Asp His Ser His Val Phe Ser Phe Gly Gly Tyr  
 370 375 380

Pro Leu Arg Gly Ser Ser Ile Phe Gly Leu Ala Pro Gly Lys Ala Arg  
 385 390 395 400

Asp Arg Lys Ala Tyr Thr Val Leu Leu Tyr Gly Asn Gly Pro Gly Tyr  
 405 410 415

Val Leu Lys Asp Gly Ala Arg Pro Asp Val Thr Glu Ser Glu Ser Gly  
 420 425 430

Ser Pro Glu Tyr Arg Gln Gln Ser Ala Val Pro Leu Asp Glu Glu Thr  
 435 440 445

His Ala Gly Glu Asp Val Ala Val Phe Ala Arg Gly Pro Gln Ala His  
 450 455 460

Leu Val His Gly Val Gln Glu Gln Thr Phe Ile Ala His Val Met Ala  
 465 470 475 480

Phe Ala Ala Cys Leu Glu Pro Tyr Thr Ala Cys Asp Leu Ala Pro Pro  
 485 490 495

Ala Gly Thr Thr Asp Ala Ala His Pro Gly Tyr Ser Arg Val Gly Ala  
 500 505 510

Ala Gly Arg Phe Glu Gln Thr  
 515